ASSOCIAZIONE RADIOAMATORI ITALIANI
ASSOCIAZIONE RADIOTECNICA ITALIANA (1927-1977)
SEZIONE ITALIANA DELLA I.A.R.U.
Eretta in Ente Morale il 10/1/50 (D.P.R. N. 368)
ORGANO UFFICIALE "RADIO RIVISTA"

Sezione di BOLOGNA
Casella Postale 2128
40100 BOLOGNA

T H E B E A C O N R O B O T " I Y 4 M "

TECHNICAL REFERENCE:

Frequency:	28195 kHz
Mode:	A1A
Power:	20 W or 2 W output (switchable)
Antenna:	Ground plane 5/8
Locator:	JN54OK
QTH:	Pontecchio Marconi, Bologna, Italy

Beacon robot cycle:

- ✦ Identification: "IY4M IY4M", an intermittent signal follows (------- - - - ---------- - -) then ending with "IY4M ROBOT QRV QRV". Identification is always transmitted at a 15 WPM (75 chrs/min)speed and 20 W output power.

- ✦ Command waiting: After identification robot waits for your command. If any command is received within 30 seconds, it will be executed immediately; otherwise identification is transmitted again. After execution of your command, a 30 sec. command waiting will follow again.

Auto speed adaptation: You can send your command at any speed in the range 10-50 WPM (50-250 chrs/min). Robot will answer at your same speed.

Receiver bandwidth: +/- 250 Hz centered on a 28195.0 kHz frequency.

QSO memory storage: About 550 QSOs.

12 keys are available to users, 6 keys are reserved to control stations.

TECHNICAL PURPOSE:

Test the propagation at long distance on 10 m. band, collecting data about stations which operate beacon robot. All data are available to users.

Test antenna performance and radiation pattern.

Send information and bulletins of general interest.

MEMORIAL PURPOSE:

The beacon has been installed near the place where Guglielmo Marconi made his early tests and experiments in radio communications. Every effort has been made by the Hams which designed and built this beacon robot in order to properly celebrate the Italian scientist.

CONTROL KEYS:

C O D E	R O B O T A N S W E R S
QRP K	*IY4M QRP PWR 2 W OUT* Switches the output power to 2 W ; this condition is kept for other commands to follow. Power is reset automatically to QRO when the beacon identification is transmitted.
QRO K	*IY4M QRO PWR 20 W OUT* Restores normal output power condition (20 W).
QTG K	An intermittent signal is sent for approx. 15 seconds. It is the same signal sent during identification.
QSA K Now please send some dashes and/or dots or a continuous signal for about 4 seconds.	First answer : *R R* Second answer: *UR S 1/9 PLUS S 1/9 PLUS* or: *SRI NIL* if the signal has not been transmitted for enough time, so that robot can't give you a signal report.
QTC? K	*QTC .../.../... STORED* Robot tells you which messages (1 thru 5) are stored at the moment; e.g. QTC 1/2/5 STORED. *NO QTC STORED* if no message is stored.
QTC 1 thru 5 K	Robot transmits the required QTC at the user speed, but not slower than 18 WPM. QTCs can be written only by control stations and are used for bulletins and information of general interest.
INFO K	*IY4M AT* (hour and date GMT) *bt* *FQ 28195 KHZ bt* *QRO (QRP) 20 (2) W OUT bt* *ANT GP 5/8 bt* *LOC JN54OK bt* *CODE SPEED..... WPM bt* *TEMP (MINUS)..... C*

LIST K

V V V LIST OF QSO AT (hour and date GMT)
Follows the list of all stored QSOs at a 50 WPM speed, fit to be received by computer (or very skilled CW operators!). Each line of the list holds the following data:

- Time and date GMT of QSO
- Callsign
- Sent signal report. It is a figure in the range 1-9 or a '?' if report couldn't be sent.
- Received signal report. It is a figure or a '?' if report was not received.
- Robot TX status : O = QRO , P = QRP.

LIST L K

Transmission as above but with speed reduced to 30 WPM. Transmission at lower speed is not allowed, because list can be very long (hundreds of QSOs).

QSO K

Robot tells you how many QSOs are stored in memory: ***nnn QSO IN MEMORY***
or: ***NO QSO IN MEMORY***

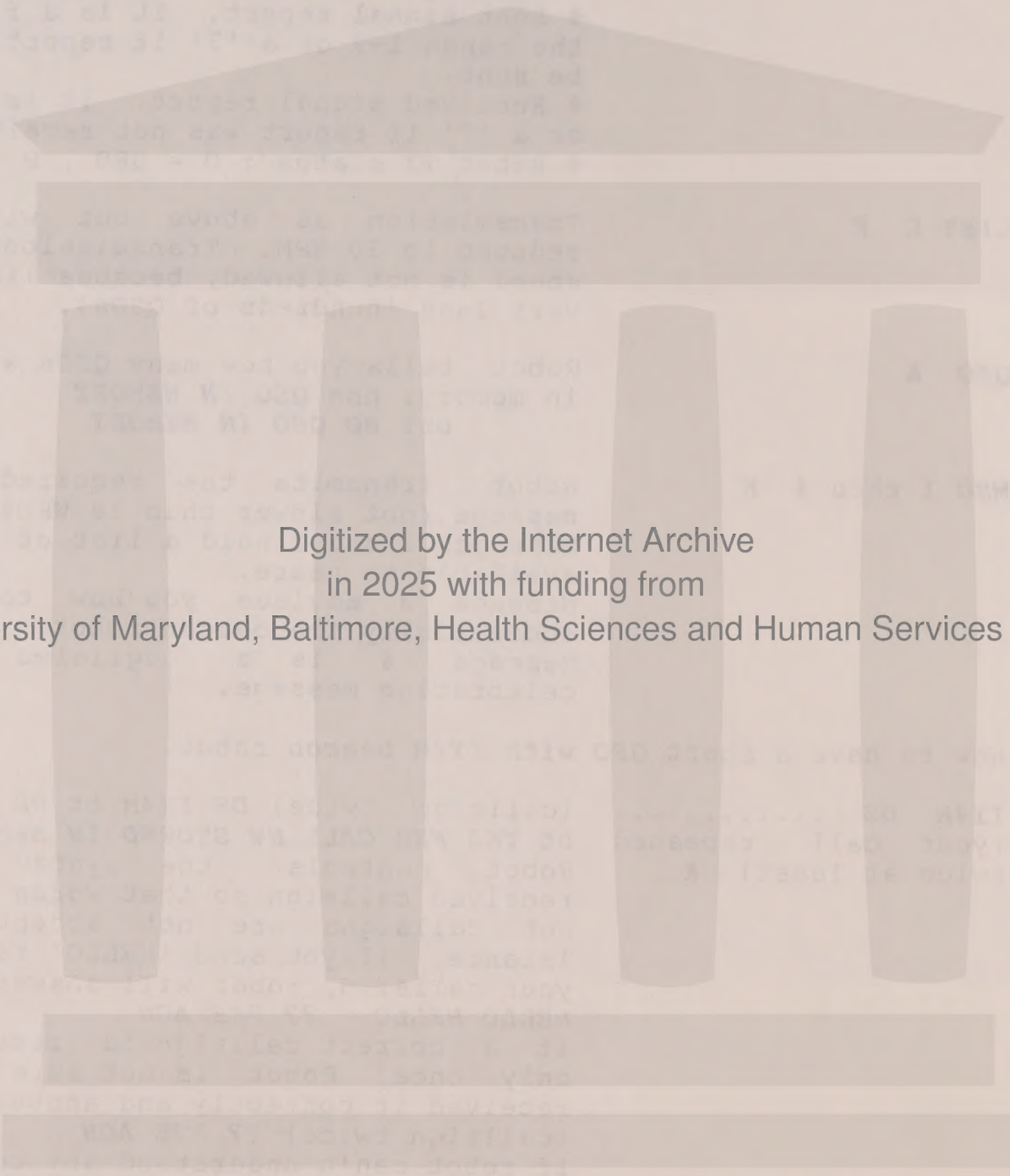
MSG 1 thru 4 K

Robot transmits the required preset message (not slower than 18 WPM).
Messages 1 and 2 hold a list of all keys available to users.
Message 3 advises you how to operate successfully the beacon robot.
Message 4 is a Guglielmo Marconi celebrating message.

How to have a short QSO with IY4M beacon robot.

IY4M DE ..... (your call repeated twice at least) ***K***

(callsign twice) ***DE IY4M bt HR OP ROBOT bt TKS FER CALL NW STORED IN MEMORY bt***
Robot controls the syntax of the received callsign so that words which are not callsigns are not accepted. For istance, if you send 'HELLO' rather then your callsign, robot will answer:
HELLO HELLO ?? PSE AGN
If a correct callsign is received but only once, Robot is not sure to have received it correctly and answers:
(callsign twice) ***?? PSE AGN***
If robot can't understand any callsign at all, it just answers: ***?? PSE AGN***
Please take care you send the callsign without any space between letters; for istance, the callsign 'IK4 EWK' is not understood by the robot. If your callsign has been received and stored in memory, robot goes on with:



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(HOW TO HAVE A QSO, continues)

NW PSE SEND SIG ES WL GIVE U RPRT BK
Now you have to send a signal as required with key QSA. Robot answers:
R UR RST IS (report twice)
or: ***SRI NIL CANT GIVE U A RPRT***
then continues with:
NW PSE MY RST RST ?? BK
Please send RST for robot (repeated once or more times), ending with a 'K' , as usual. Robot answers:
R R TKS FER (RST)
A greeting follows, in English or in one of the following languages: Italian, Spanish, French, German, Swedish/Finnish, Japanese, Serbo-Croat, Russian, Portuguese.

RESERVED KEYS TO CONTROL STATIONS

- Clearing of QSO memory.
- Message writing (QTCs).
- Set QTCs time for automatic transmission.
- Internal clock/calendar setting.
- QRT setting of beacon robot for an indefinite period.
- Restore of operative condition.

NOTES TO OPERATE IY4M BEACON ROBOT:

- To be sure to enter into the robot rx band, please transmit some V's (or other random chrs) followed by the ending K. If you are within the band, the answer is '??'. We recommend to tune in the middle of the band (500 Hz wide) because at the window edges reception could be critical.

- We recommend to send a couple of V's at the beginning of each transmission. Even if not essential, this procedure facilitates robot synchronization to the user speed.

- Each key can be repeated several times to facilitate decoding with QRM. Take note, however, that available time is 30 sec. only.

- We recommend to keep the ending K well spaced; it must be preceded and followed by a space. This 'K' means: 'end of transmission, now please execute my command'. Sometimes it happens that robot doesn't answer at all at your command. If you are within then robot rx band, it's likely the ending 'K' has not been received properly. So try to send another 'K' rather than repeat the whole command.

- Control keys (as well as 'IY4M' and the callsign) must be transmitted with no spaces between letters.

-- BEACON ROBOT "IY4M" --

Design and construction:

IK4BWC I4DVT IK4EWK I4IJY I4TNM

and with the cooperation of:

I4ACO I4BER I4BUA IK4CZF I4NE I4QHD I4TA

Sponsorized by : A.R.I. - BOLOGNA

For other information or any question please write to :

IY4M P.O.Box 2128 BOLOGNA , ITALY

Comments and suggestions will be very appreciated.

Dear OMs

I hope you can receive soon this 1st BEACON-ROBOT in the next propagation opening on 10 m. band,

best 73's Franco IT4QVT

Bologna July 27. 86